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(56) Documents cited

GB 1497198 A EP 0375495 A1

(58) Field of search

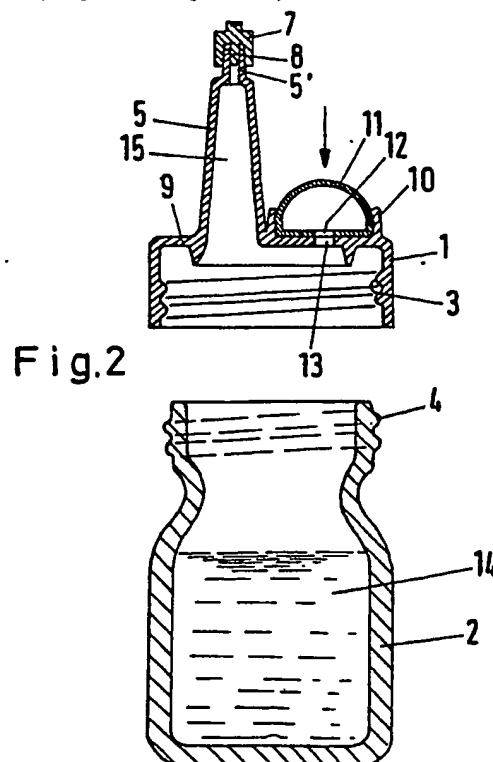
UK CL (Edition K) B8D DCE DCF5 DCF8 DCG, B8T

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INT CL⁵ B65D 47/04 47/06 47/12 47/18 47/20 47/34
 47/36

(54) A container equipped with a lid

(57) A container for paint to be used in a spray pistol, has a lid 1 with an outlet opening 15 and an elastic region 11 which is displaceable inwards by finger pressure towards the interior of the container and automatically resiliently returns to its original position when the finger pressure is removed. The outlet opening 15 may be in the form of a spout having a cap 7 originally integrally formed as part of the lid which has to be cut off in order to form outlet and then inverted to form cap, the cap 7 having an inner plug 8 and an annular recess (16, Fig. 3) for fitting purposes. The region 11 may be of elastic material which automatically regains its original shape, or the resilient returning force can be obtained by other means e.g. a spring.



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Fig.1

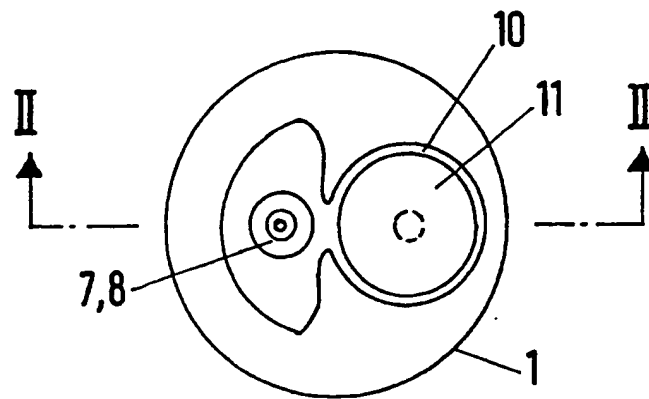


Fig.3

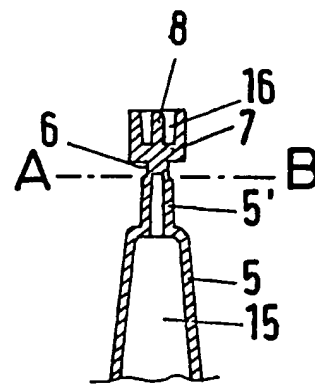
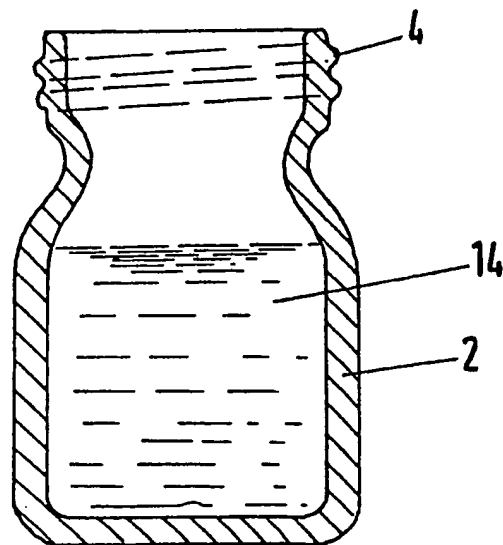
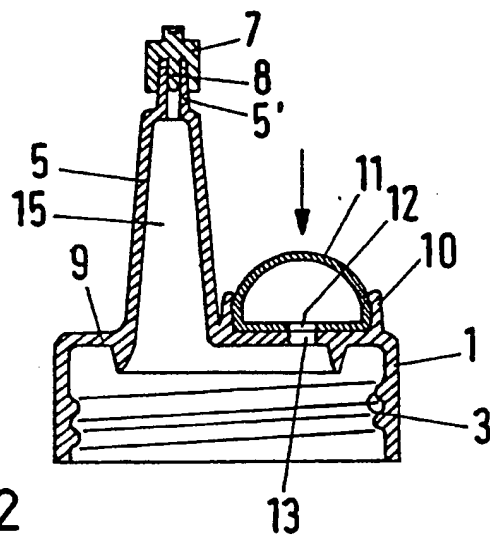


Fig.2



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A CONTAINER EQUIPPED WITH A LID

The invention relates to a container equipped with a lid for receiving paint which is fed into a spray pistol for application using the so-called "air-brush" technique. In the aforementioned air-brush technique the paint is applied in a fine mist using the spray pistol under air pressure, particularly in model building where the application can be performed on replicas on a smaller scale of motor vehicles, aeroplanes and the like. This air-brush technique is used by persons such as children, adolescents and modellers or lovers of model reproductions.

With the previously customary containers of this kind, the lid had to be screwed off in order to be able to supply an appropriate amount of paint from the container into the spray pistol or its paint receiving chamber. The screwing off and screwing on again of the lid is troublesome and time consuming. During the manipulations with the open container the lid can be lost or fall down from the work-table. Moreover paint can be spilt from the container and can dirty the clothing of the user or the work-table. The exact dosing of the amount of paint which is supplied from the container into the spray pistol is problematical. Furthermore the paint containers are thereby open for a longer time which leads to a disadvantageous evaporation of the solvent for the paint.

The task or problem to be solved by the invention consists in improving the functioning and ease of operation of such a container relative to the state of the art.

Accordingly the invention provides a container equipped with a lid for receiving paint which is fed into a spray pistol for application using the so-called air-brush technique, wherein the lid comprises an outlet opening and a region which is displaceable inwards by finger pressure towards the interior of the container, where resilient return means are provided in order to return the

displaceable region automatically to its original position when the finger pressure is removed.

In order to supply paint to the spray pistol, such a container need only be held with its lid end underneath in such a manner that the paint enters into the outlet opening. After that the region mentioned must be acted upon by pressure applied by the finger. This increases the internal pressure in the container and consequently causes an outflow of paint from the outlet opening. The dispensing can in this way be performed so finely that only individual drops are supplied. This is important for the performance of the air-brush technique if one for example wishes to alter the tint of a paint very finely or mix it with other paints. The user can have a plurality of such containers containing paints standing on the table, where each container contains a different paint in order to mix therefrom the correct colour combination in the spray pistol. The lids remain permanently on the containers. The described disadvantages of the state of the art are avoided.

A preferred form of embodiment of the invention is the subject matter of claim 2. A section of this kind in the form of a hollow ball-like element is easy to operate by finger pressure, whereby the user is able to determine, by depressing the wall of this section to a greater or lesser extent, the amount of paint which consequently emerges. The internal volume of this hollow ball-like section is relatively large, and the wall of the hollow ball-like section can be kept relatively thin. As a result, even with a relatively small finger pressure, sufficient paint can be dispensed.

The features described in claim 3 make manipulation easier, in particular the introduction of the paint into the spray pistol.

Claim 4 hinders evaporation of the paint solvent, whereas claims 5 and 6 present advantageous embodiments of a closure in accordance with claim 4.

Embodiments of the invention are described below with reference to the accompanying drawings in which:

Figure 1 is a top view of an embodiment in accordance with the invention,

Figure 2 is a longitudinal section along the line II-II in Fig. 1; and

Figure 3 is another embodiment of the invention which relates to the arrangement of the paint outlet opening.

A container 1, made for example of glass or plastic, receives the paint 14 and comprises an external thread 4 onto which the internal thread 3 of a lid 1 can be screwed.

The lid 1 is equipped on its upper side with a circular projection 10 within which a region is provided which can be pressed in the direction of the arrow towards the interior of the container against a resilient reaction. When this pressure is removed, then the region returns again into its original position because of its resilient elasticity. In a preferred embodiment shown in Fig. 2, this region consists of an element having appropriate elasticity itself, e.g. an element made of rubber, which in this case is formed in the shape of a section 11 of a part of a hollow ball or a section of a similarly shaped hollow body. On the underside the section 11 can also comprise angled regions between which an air passageway 12 is provided which is continued by an air passageway 13 in the material of the lid, so that when pressure is applied in the direction of the arrow, air present in the section 11 passes into the interior of the container. For this purpose the section 11 is attached to the lid 1 to form a seal, e.g. by an adhesive fastening, so that during the aforementioned pressing together of the section 11 no air can escape from it to the outside. In addition an outlet opening 15 is provided which passes

through a connecting nozzle 5 which is preferably made in one piece with the material of the lid, for example made of plastic, and can be closed at the top by a stopper 7.

In operation it is so arranged that the structure shown in Figure 2 is rotated to such an extent that the lid region is lower than the bottom of the container, so that the paint 14 at least passes into the opening 15. If pressure is then applied in the direction of the arrow on the section 11, this causes a decrease in the internal volume of the container as a result of which some of the paint is brought to the outlet from the opening 15. Because the section 11 is made of an elastic material, when the pressure is removed (see arrow) it automatically regains its original shape, shown in Figure 2. Such a resilient returning force can also be obtained by other means, e.g. by means of a spring, which is compressed on exerting a pressure in the direction of the arrow, thus pressing in a flexible region, and which after removal of the pressure restores the flexible region to its original position again. However, because of its simplicity of construction and robustness, the structure shown in Figures 1 and 2 is the preferred form of embodiment of the invention.

The outlet opening 15 and the connecting nozzle 5 surrounding it project from the lid so that it is also possible to reach unfavourably located spray pistol paint receiving regions.

Figure 3 shows a preferred embodiment of the removable stopper 7 for the outlet opening. It comprises a design of connecting nozzle 5 in which the nozzle is continued by a relatively thin neck 6 which is terminated by a closing element 7 comprising a centrally located internal closing plug 8. In this way the passage opening 15 is closed on dispatch. When it is used for the first time, the neck 6 is cut along the line A-B. The portion cut off can then be used as a stopper, where the plug 8 fits in the mouth of the outlet opening 15 and the annular recess 16 located between the plug 8 and the outer ring of the stopper engages over the attachment 5' on the front face of the nozzle 5 forming a press fit.

CLAIMS

1. A container equipped with a lid for receiving paint which is fed into a spray pistol for application using the so-called air-brush technique, wherein the lid (1) comprises an outlet opening (15) and a region (11) which is displaceable inwards by finger pressure towards the interior of the container, where resilient return means are provided in order to return the displaceable region automatically to its original position when the finger pressure is removed.
2. A container according to claim 1, wherein a region made of an elastic material, e.g. rubber, preferably in the form of a section (11) of a hollow ball or the like, is inserted in the container lid (1) forming a seal and that an air passageway (12, 13) is present between the side of the region situated towards the interior of the container, or concave side of the hollow section, and the container.
3. A container according to claim 1 or 2, wherein the outlet opening (15) is provided in a connecting nozzle (5) projecting away from the lid and preferably made in one piece with the latter.
4. A container according to any one of claims 1 to 3, wherein the outlet opening can be closed.
5. A container according to claim 4, wherein the connecting nozzle (5) possesses a closure on the front end into which the outlet passage (15) projects, and in that this closure can be cut off near the outlet passage and furthermore the closure comprises a structure at its front end such that the closure fits by means of this structure over the remaining front end (5') of the connecting nozzle to form a seal.
6. A container according to claim 5, wherein the front end of the closure (7') comprises a central inner plug (8) and an annular recess (16) surrounding this, and the plug (8) fits into the outlet opening (15) and the annular recess (16) fits over the front end (5') of the residual connecting nozzle (5).

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7. A container substantially as described herein with reference to the accompanying drawings.

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Examiner's report to the Comptroller under
Section 17 (The Search Report)

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Relevant Technical fields

(i) UK CI (Edition ^K) B8D: DCF5, DCF8, DCG, DCE
 B8T: TWD, TWR, TWE, TWX

(ii) Int CI (Edition ⁵) B65D: 47/04, 47/06, 47/12,
 47/18, 47/20, 47/34, 47/36

Search Examiner

ALAN O'DONNELL

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

8 JANUARY 1992

Documents considered relevant following a search in respect of claims 1-7

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
Y	GB 1497198 A (L'OREAL) - see Figure 1	1
Y	EP 0375495 A1 (ROBERT FINKE KUNSTSTOFF- SPRITZGUSS-WERK) - see figures 2-3 and page 1 lines 12-18	1

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

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